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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,527	11/24/2003	Taro Fukaya	245820US0TTCRD	1993

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EXAMINER	
SERGENT, RABON A	
ART UNIT	PAPER NUMBER
1711	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/718,527	FUKAYA ET AL.	
	Examiner	Art Unit	
	Rabon Sergent	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,7,9,10 and 12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,9,10 and 12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/12/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have failed to clearly set forth the relationship of the amount of tolylenediamine to the decomposed substance. It is unclear if applicants are claiming that the decomposed substance contains the claimed amount of tolylenediamine.

2. Claims 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have failed to provide adequate support for the scope of subject matter of the claims. Applicants have stated that support for the claims stems from Examples 20, 21, and 28, as well as the "remaining examples"; however, the position is taken that the examples are adequate to provide support only for what they actually disclose. In other words, support is limited to the exemplified values as they relate to the exemplified compositions. Accordingly, the examples are insufficient to provide support for the scope of values and compositions encompassed by the claims. This position is further bolstered by the following remarks. The cited examples all utilize Urethane Resin A which is disclosed by applicants to contain approximately 25% by weight of TDI. Therefore, the claimed values are all derived from the decomposition of urethanes derived from TDI, hence the relationship to TDA; however, applicants have failed to provide any disclosure that would suggest that the claimed values may be derived from the decomposition of urethanes derived from other than TDI, yet applicants'

claims encompass such urethanes. Accordingly, applicants have failed to provide support for the scope of the claims.

3. Claims 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants have failed to provide enablement for the decomposition of urethanes derived from other than TDI that have the claimed TDA content. The cited examples all utilize Urethane Resin A which is disclosed by applicants to contain approximately 25% by weight of TDI. Therefore, the claimed values are all derived from the decomposition of urethanes derived from TDI, hence the relationship to TDA; however, applicants have failed to provide any guidance that would enable one to arrive at the claimed TDA contents where non-TDI based urethanes have been decomposed, yet applicants' claims encompass such compositions. In the absence of this guidance, the skilled artisan could not practice the scope of the claimed invention (i.e.; utilizing non TDI-based urethanes) without having to resort to undue experimentation. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-4, 6, 7, 10, and 12-22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 6, 7, 9, 11, 14, 16, 17, and 21-30 of copending Application No. 10/445,361. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to compositions and methods wherein a urethane resin has been decomposed or recycled by treating the resin with a carboxyl group derived compound.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 1-4, 6, 7, 10, and 12-22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15-18 of copending Application No. 10/870,905. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to compositions

and methods wherein a urethane resin has been decomposed or recycled by treating the resin with a carboxyl group derived compound.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 1-4, 6, 7, 10, and 12-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 7,141,647. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to compositions and methods wherein a urethane resin has been decomposed or recycled in an extruder by treating the resin with a carboxyl group derived compound. Furthermore, given that each claim set encompasses the same urethane resins and the same decomposing agents, the position is taken that applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition. In view of the issuance of U.S. patent application 10/873,237, this rejection has been converted to a non-provisional rejection.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 12, 18, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Schneider et al. ('749).

The reference discloses the decomposition of polyurethane, including polyurethane derived from toluene diisocyanate, by treatment with polyester adducts. The position is taken that since the same urethanes and esters are used for the decomposition, the resulting product of Schneider et al. inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Schneider et al. See abstract; column 6, lines 50+; and Example 8. Furthermore, applicants have not established that use of an extruder yields a patentably distinct product from the composition of Schneider et al.

10. Claims 12 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Broeck et al. ('151).

The reference discloses the decomposition of polyurethane by treatment with polyester polyols. The position is taken that since the same urethanes and esters are used for the decomposition, applicants' claimed cleavage of urethane bonds and capturing of amino groups

are inherent functions of the decomposition reaction disclosed by Broeck et al. See examples. Furthermore, applicants have not established that use of an extruder yields a patentably distinct product from the composition of Broeck et al.

11. Claims 12, 18, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Heiss ('577).

The reference discloses the decomposition of polyurethane, including polyurethanes derived from toluene diisocyanate, by treatment with polyester polyols and/or metal carboxylate salts. The position is taken that since the same urethanes and esters and/or salts are used for the decomposition, the resulting product of Heiss inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Heiss. See column 3, line 41 through column 4, line 12 and examples. Furthermore, applicants have not established that use of an extruder yields a patentably distinct product from the composition of Heiss.

12. Claims 12, 18, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Heiss ('824).

The reference discloses the decomposition of polyurethane, including polyurethanes derived from toluene diisocyanate, by treatment with carboxylic acids. The position is taken that since the same urethanes and carboxylic acids are used for the decomposition, the resulting product of Heiss inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Heiss. See column 1, lines 50+; column 2, and examples.

Furthermore, applicants have not established that use of an extruder yields a patentably distinct product from the composition of Heiss.

13. Claims 12-14, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. ('167).

The reference discloses the decomposition of polyurethane, including polyurethanes derived from toluene diisocyanate, by treatment with carboxylic acid anhydrides. The position is taken that since the same urethanes and anhydrides are used for the decomposition, the resulting product of Yang et al. inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Yang et al. See abstract; column 3, lines 5+; and examples. Furthermore, applicants have not established that use of an extruder yields a patentably distinct product from the composition of Yang et al.

14. Claims 1, 2, 6, 7, 9, 10, 12, 15, 18, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. ('749) in view of JP 2002-012699.

The primary reference discloses the decomposition of polyurethane, including polyurethane derived from toluene diisocyanate, by treatment with polyester adducts. The position is taken that since the same urethanes and esters are used for the decomposition, the resulting product of Schneider et al. inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Schneider et al. See abstract; column 6, lines 50+; and Example 8.

15. Though the primary reference fails to disclose the use of an extruder, the use of an extruder within polyurethane decomposition processes was known at the time of invention, as shown by the teachings of JP 2002-012699. JP 2002-012699 further teaches that decomposition of the polyurethane while kneading (as occurs within the disclosed extruder) enables homogeneous decomposition by a small amount of decomposition agent and can prevent deterioration of the resulting product because of short decomposition time. See drawing of the JP patent and abstract and paragraph [0017] of the translation. Therefore, in view of these teachings, one of ordinary skill in the art would have been motivated to conduct the decomposition reaction of the primary reference within an extruder. Furthermore, the use of an extruder to process a solid polymer would have been an obvious design choice to one of ordinary skill in the art.

16. Claims 1, 2, 6, 7, 9, 10, 12, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broeck et al. ('151) in view of JP 2002-012699.

The primary reference discloses the decomposition of polyurethane by treatment with polyester polyols. The position is taken that since the same urethanes and esters are used for the decomposition, applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Broeck et al. See examples.

17. Though the primary reference fails to disclose the use of an extruder, the use of an extruder within polyurethane decomposition processes was known at the time of invention, as shown by the teachings of JP 2002-012699. JP 2002-012699 further teaches that decomposition of the polyurethane while kneading (as occurs within the disclosed extruder) enables homogeneous decomposition by a small amount of decomposition agent and can prevent

deterioration of the resulting product because of short decomposition time. See drawing of the JP patent and abstract and paragraph [0017] of the translation. Therefore, in view of these teachings, one of ordinary skill in the art would have been motivated to conduct the decomposition reaction of the primary reference within an extruder. Furthermore, the use of an extruder to process a solid polymer would have been an obvious design choice to one of ordinary skill in the art.

18. Claims 1, 2, 6, 7, 9, 10, 12, 15, 18, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heiss ('577) in view of JP 2002-012699.

The primary reference discloses the decomposition of polyurethane, including polyurethanes derived from toluene diisocyanate, by treatment with polyester polyols and/or metal carboxylate salts. The position is taken that since the same urethanes and esters and/or salts are used for the decomposition, the resulting product of Heiss inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Heiss. See column 3, line 41 through column 4, line 12 and examples.

19. Though the primary reference fails to disclose the use of an extruder, the use of an extruder within polyurethane decomposition processes was known at the time of invention, as shown by the teachings of JP 2002-012699. JP 2002-012699 further teaches that decomposition of the polyurethane while kneading (as occurs within the disclosed extruder) enables homogeneous decomposition by a small amount of decomposition agent and can prevent deterioration of the resulting product because of short decomposition time. See drawing of the JP patent and abstract and paragraph [0017] of the translation. Therefore, in view of these

teachings, one of ordinary skill in the art would have been motivated to conduct the decomposition reaction of the primary reference within an extruder. Furthermore, the use of an extruder to process a solid polymer would have been an obvious design choice to one of ordinary skill in the art.

20. Claims 1, 2, 9, 10, 12, 15, 18, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heiss ('824) in view of JP 2002-012699.

The primary reference discloses the decomposition of polyurethane, including polyurethanes derived from toluene diisocyanate, by treatment with carboxylic acids. The position is taken that since the same urethanes and carboxylic acids are used for the decomposition, the resulting product of Heiss inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Heiss. See column 1, lines 50+; column 2, and examples.

21. Though the primary reference fails to disclose the use of an extruder, the use of an extruder within polyurethane decomposition processes was known at the time of invention, as shown by the teachings of JP 2002-012699. JP 2002-012699 further teaches that decomposition of the polyurethane while kneading (as occurs within the disclosed extruder) enables homogeneous decomposition by a small amount of decomposition agent and can prevent deterioration of the resulting product because of short decomposition time. See drawing of the JP patent and abstract and paragraph [0017] of the translation. Therefore, in view of these teachings, one of ordinary skill in the art would have been motivated to conduct the decomposition reaction of the primary reference within an extruder. Furthermore, the use of an

extruder to process a solid polymer would have been an obvious design choice to one of ordinary skill in the art.

22. Claims 1-4, 9, 10, 12-14, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. ('167) in view of JP 2002-012699.

The primary reference discloses the decomposition of polyurethane, including polyurethanes derived from toluene diisocyanate, by treatment with carboxylic acid anhydrides. The position is taken that since the same urethanes and anhydrides are used for the decomposition, the resulting product of Yang et al. inherently contains the claimed quantity of TDA and applicants' claimed cleavage of urethane bonds and capturing of amino groups are inherent functions of the decomposition reaction disclosed by Yang et al. See abstract; column 3, lines 5+; and examples.

23. Though the primary reference fails to disclose the use of an extruder, the use of an extruder within polyurethane decomposition processes was known at the time of invention, as shown by the teachings of JP 2002-012699. JP 2002-012699 further teaches that decomposition of the polyurethane while kneading (as occurs within the disclosed extruder) enables homogeneous decomposition by a small amount of decomposition agent and can prevent deterioration of the resulting product because of short decomposition time. See drawing of the JP patent and abstract and paragraph [0017] of the translation. Therefore, in view of these teachings, one of ordinary skill in the art would have been motivated to conduct the decomposition reaction of the primary reference within an extruder. Furthermore, the use of an extruder to process a solid polymer would have been an obvious design choice to one of ordinary skill in the art.

24. Applicants' arguments have been considered and have been addressed within the respective prior art rejections.

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

RABON SERGENT
PRIMARY EXAMINER

R. Sergent
December 20, 2006